MR method and apparatus for on-resonance magnetization transfer (MT) preparation using time delay-separated matched pairs of adiabatic pulses

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Magnetic resonance imaging (MRI) systems and methods using adiabatic tip-down and matchedadiabatic flip-back pulses are disclosed. According to an aspect, a system includes a signal generator configured to generate a pulse sequence for on-resonance magnetization transfer preparation. The pulse sequence includes an adiabatic tip-down pulse and a matched adiabatic flip-back pulse for separating spins in a mobile spin pool from spins in a bound spin pool of an anatomical region of interest for imaging. The system includes radio frequency (RF) coils configured to transmit RF pulses in response to the pulse sequence and to acquire RF data in response to transmission of the RF pulses. Further, the system includes a processing system configured to process the RF data to provide a display image indicating different tissue types with discrimination.

Patents

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Title: MAGNETIC RESONANCE IMAGING (MRI) SYSTEMS AND METHODS USING ADIABATIC TIP-DOWN AND MATCHED ADIABATIC FLIP-BACK PULSES

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